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Integrating a new management accounting routine into a routine cluster: the role of interactions between multiple management accounting routines

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Abstract

Purpose – This study examines interactions between multiple management accounting routines in integrating a new management accounting routine into a routine cluster.

Design/methodology/approach – This study uses a theoretical framework based on routine clusters, including routine complementarities. We use an in-depth case study to explore interactions of a management accounting routine integrating into a routine cluster.

Findings – The findings show that complementarity between an existing and a new management accounting routine facilitates integration of the new routine into a routine cluster.

They also suggest that when an ostensive understanding of a routine exists, the integration of the new management accounting routine is stronger as the new and existing routines in the routine cluster are more closely intertwined.

Originality/value – The paper is among the first to explore the role of intertwinedness of a new management accounting routine and existing organizational routines in integrating a new management accounting routine into a routine cluster. The findings imply that future management accounting research may need to distinguish between different forms of complementarity.

Keywords – Interrelated routines, multiple routines, management accounting routines, routine cluster, complementarities.

Paper type – Research paper.

1. Introduction

Organizational routines have long been considered as one of the most important concepts in management and organization studies to explain organizational behavior (e.g., Nelson and Winter, 1982; Feldman, 2000; Parmigiani and Howard-Grenville, 2011). Consequently, there is a good body of management accounting studies that have adopted organizational routines as a lens to better understand the emergence and change of management accounting practices over time (e.g., Bertz and Quinn, 2022; Burns and Scapens, 2000; Lukka, 2007; Quinn and Hiebl, 2018; ter Bogt and Scapens, 2019).

As organizations usually feature, not single, but multiple routines (Simon, 1962; Thompson, 1967; Nelson and Winter, 1982; Winter, 2003; Kremser and Schreyögg, 2016), general-interest management and organization studies on multiple routines or interrelated routines have increased in recent years (e.g., Birnholtz *et al.*, 2007; Turner and Rindova, 2012; Sele and Grand, 2016; Prange *et al.*, 2017; Rosa *et al.*, 2020). In this vein, Kremser and Schreyögg (2016) introduced the concept of routine clusters, which is drawn upon here. They defined a routine cluster as a collection of interrelated and complementary routines to complete a common task. Further, they proposed a logic of complementarities in which the integration of new routines into a cluster depends heavily on potentially resulting misfit costs for the cluster.

In the management accounting literature, although interactions between management accounting and control practices have recently received more attention (e.g., Ahrens, 2018; Carlsson-Wall *et al.*, 2021; Davila and Ditillo, 2017; Demartini and Otley, 2020; Mouritsen *et al.*, 2022; Pfister and Lukka, 2019; van der Kolk *et al.*, 2020), these studies have not drawn on an organizational routines perspective. Thus, while such literature may have examined interactions of various practices which were likely routinized and which can be observed regularly in business practice (e.g., Chenhall and Langfield-Smith, 1998; Chenhall and Moers, 2015; Joshi, 2001), they have not explored interactions between new management accounting routines integrating into a routine cluster. Indeed, as will be detailed later, much management accounting research considers routines as one ontological grouping and does not consider routine dynamics at other levels. Thus, in short, while existing literature such as Quinn (2011, 2014), Oliveira and Quinn (2015) and Quinn and Hiebl (2018) has contributed to our understanding of management accounting routines theoretically – typically drawing on organizational literature – it has yet to encapsulate newer theoretical underpinnings such as that of routine clusters as proposed by Kremser and Schreyögg (2016). This seems a rather obvious gap in the research, given that management accounting routines are themselves “interrelated and complementary routines” as suggested by Kremser and Schreyögg (2016), but are also so in the sense of a broader management control system. A more detailed review of existing literature is presented in the next section.

In addition, most evidence on interactions between management accounting practices stems from developed countries, where the dynamics on management accounting and control practices often differ from emerging countries (e.g., Hopper *et al.*, 2009, 2017; Lassou *et al.*, 2021; Nguyen and Hiebl, 2023; van Helden and Uddin, 2016; van Helden *et al.*, 2021). In particular, the literature suggests that in emerging countries, new management accounting practices are often introduced ceremonially to satisfy external pressures from stakeholders (e.g., Clerkin and Quinn, 2021; Hopper *et al.*, 2009, 2017; Joshi, 2001; Ndemewah and Hiebl, 2022). Consequently, while ostensibly adopted, such practices are often resisted (e.g., Aliabadi *et al.*, 2021; Harahap, 2021; How and Alawattage, 2012; Moses and Hopper, 2022) and thus may not be routinized or integrated in existing routine clusters. Our empirical case of an emerging-country organization is thus of interest to this body of literature, although the main focus of the study is on the integration of management accounting routines in routine clusters.

Against this backdrop, this paper adds to the existing management accounting literature by examining interactions between management accounting routines, and specifically when adopting a new management accounting routine into a routine cluster. The research question for this paper is thus, how does the interaction between multiple management accounting routines affect the integration of a new management accounting routine into a routine cluster? To address this question, an in-depth case study was undertaken at N&TCo¹, a private manufacturing company in Vietnam. A specific focus is on the production routines cluster at N&TCo which are considered the most important since its primary operation is as a supplier to a large European retail group – and is thus heavily reliant on its production efficiency. The case covers the introduction of a new management accounting routine that was geared towards integrating continuous improvement thinking into the production routines cluster. The findings suggest that the interaction between this new continuous improvement routine with another important management accounting routine – a performance evaluation and rewards routine – influenced the integration of the continuous improvement routine into the production routines cluster.

The main contribution of this study is related to the logic of complementarities proposed by Kremser and Schreyögg (2016). In line with their theorizing, the findings below show that low misfit costs were a key reason why a continuous improvement routine was well integrated into the production cluster at N&TCo. At the same time, the evidence highlights additional factors that can influence the integration of new routines into a routine cluster – factors such as “passion for work”, “level of expertise”, an ostensive understanding, and complementarity between management accounting routines. By drawing on the logic of routine complementarities, this study not only adds to the work on routine clusters and complementarities (Kremser and Schreyögg, 2016), but also builds on extant literature on management accounting routines by showing that complementarity between an existing and a new management accounting routine makes the smooth integration of a new management accounting into a routine cluster more likely. In particular, the present study highlights that such integration was stronger where the new routine and the existing routine were *intertwined* and not just side-by-side. This implies that future research on the complementarities between management accounting and control practices may need to more closely distinguish between forms of complementarity. A second contribution is that in this case of an emerging-country

¹ The name of the company is anonymized.

organization, resistance to newly introduced management accounting practices was not as pronounced as in some prior cases (e.g., Aliabadi *et al.*, 2021; Harahap, 2021; How and Alawattage, 2012; Moses and Hopper, 2022; Nguyen and Hiebl, 2023). A reason for such non-existing resistance might be found in the complementarity and intertwinedness of the new management accounting routine and the existing organizational routines.

The remainder of this paper is structured as follows. Section 2 provides a brief review of the existing literature on organizational and management accounting routines. A review of literature on interrelated management accounting practices as well as the propositions by Kremser and Schreyögg (2016) on the logic of routine complementarities is also given to tease out under what conditions new routines may be integrated well into a routine cluster. Section 3 details the research methods, including the data collection and data analysis. In Section 4, the findings on the effect of the interaction between two management accounting routines on the integration of a new management accounting routine into a routine cluster are presented. The discussion of these findings, the conclusions, and the limitations of this study are then presented in Section 5.

2. Organizational and management accounting routines

2.1. General routines research

Routines are an integral part of organizational life for the accomplishment of work (Cyert and March, 1963; Nelson and Winter, 1982; Levitt and March, 1988; Gersick and Hackman, 1990). An organizational routine is generally defined as “a repetitive, recognizable pattern of interdependent actions, involving multiple actors” (Feldman and Pentland, 2003, p. 96). Based on this general definition, Pentland (2011, pp. 280-281) suggested that a given phenomenon could be considered as an organizational routine when it meets four essential conditions: 1) it is repetitive, 2) it produces recognizable patterns of action, 3) actions are interdependent, and 4) multiple actors are involved.

Initially, routines were primarily considered as encapsulating inertia (Hannan and Freeman, 1984), mindlessness (Ashforth and Fried, 1988), demotivation (Ilgen and Hollenbeck, 1991), competency traps (March, 1991), or stability and repetition (e.g. Gersick and Hackman, 1990; Cohen *et al.*, 1996). However, more recent studies have shown that routines also represent a source of organizational change and flexibility as human actors are involved in carrying out

routines and have capabilities to adjust them to their interests (Becker and Lazaric, 2003; Becker *et al.*, 2005; Feldman, 2000; Feldman and Pentland, 2003; Rerup and Feldman, 2011). In this vein, Feldman and Pentland (2003) proposed a new understanding of organizational routines as endogenous drivers of organizational change. Specifically, Feldman and Pentland (2003) conceptualized organizational routines as dual dimensions by introducing the ostensive and the performative aspects of routines. While the ostensive aspect of a routine demonstrates an actors' understanding of routines, the performative aspect represents the essential action executed by particular individuals when they are engaged in organizational routines. In this vein, although the ostensive aspects are used to orient the performance, individual actions and performance may deviate from the ostensive aspects' guidance. Further, because routines can produce a variety of performances from steady to changing depending on different conditions (Feldman, 2000; Feldman and Pentland, 2003; Pentland and Reuter, 1994; Pentland and Feldman, 2005), understanding a routine's stability and variability is the primary purpose of the dynamic perspective of routines (Feldman and Pentland, 2008). As a result, these new insights on routines and their inherent dynamics, have inspired a series of empirical studies on analyzing organizational routines as both sources of stability and change (e.g., Dittrich *et al.*, 2016; Feldman and Pentland, 2008; Howard-Grenville, 2005; Loch *et al.*, 2013; Pentland *et al.*, 2012; Sharma *et al.*, 2014; Turner and Rindova, 2012).

Based on existing research on organizational routines (e.g. Feldman and Pentland, 2003, 2005, 2008; Howard-Grenville, 2005; Pentland *et al.*, 2012), management accounting scholars have shown an increased interest in management accounting routines to better understand how and why management accounting practices emerge, are shaped, change or remain stable over time (e.g., Bertz and Quinn, 2022; Lukka, 2007; Oliveira and Quinn, 2015; Perren and Grant, 2000; Quinn, 2011, 2014; Quinn and Hiebl, 2018; ter Bogt and Scapens, 2019; van der Steen, 2009, 2011). Arguably, a starting point for this research tradition was the framework by Burns and Scapens (2000) (see also Scapens, 1994) which largely drew on old institutional economics. They noted the notions of organizational rules (how things should be done) and routines (how things are done) as a lens to better understand management accounting change. Later, Quinn (2011) bolstered Burns and Scapens (2000) by drawing on insights from Feldman and Pentland (2003). Specifically, Quinn (2011) questioned the Burns and Scapens (2000) notion of management accounting rules, suggesting the ostensive routine (Feldman and Pentland, 2003) was a more appropriate concept. Similarly, van der Steen (2011) explored the dynamics involved in the emergence and change of management accounting routines to shed light on

which complex dynamics in routines promote the stability and change in management accounting practices. Oliveira and Quinn (2015) incorporated the notion of material routines (embedded within software) based on the work of Volkoff *et al.* (2007). They accepted the prior literature but noted how rules (in the form of material routines) had received less focus in the literature than routines. This point was later echoed by Bertz and Quinn (2014), who argued management accounting rules (formal and written procedures) may be more relevant in certain contexts.

Drawing on extant literature to find potential factors that may influence the foundation of management accounting routines, Quinn and Hiebl (2018) proposed a framework on the foundation of management accounting routines in which the foundations could be influenced by a combination and/or interaction of factors at (i) the organizational level, (ii) the organizational field level and (iii) the economic and political level. Most recently, ter Bogt and Scapens (2019) provided an extended version of the Burns and Scapens (2000) framework and, amongst other elements, added the notion of situated rationality to explain which rationalities actors may apply in a specific situation, which in turn can influence the stability or change of management accounting routines (see also Bertz and Quinn, 2022). There have also been some studies on interactions between management accounting practices, which are likely routines. This stream of the literature reflects the idea that an organization is usually composed of not only a single routine, but multiple interrelated routines as suggested by Kremser and Schreyögg (2016), Ahrens (2018) and van der Kolk *et al.* (2020). Other research on management accounting practices also shows that new management accounting practices are seldom introduced in a greenfield context (Demartini and Otley, 2020), and it is more likely that they will be introduced in a context where they will interact with existing management accounting practices – see the next section. Such research however has not drawn on detailed theoretical concepts around organizational routines to offer explanations for routine dynamics.

Additionally, it is reasonable to state that a majority of existing research has drawn on evidence from developed economies. The dynamics around the adoption of management accounting practices have been found to differ strongly in emerging economies. That is, reviews of management accounting research on emerging economies mostly suggest that such practices are often implemented due to external pressure (e.g., Clerkin and Quinn, 2021; Hopper *et al.*, 2009, 2017; Ndemewah and Hiebl, 2022; van Helden and Uddin, 2016; van Helden *et al.*, 2021). Consequently, actors in emerging-economy organizations may adopt such management

accounting practices ceremonially, often leading to a loose or non-existing coupling between information these actors provide through management accounting practices and their day-to-day activities (e.g., Aliabadi *et al.*, 2021; Harahap, 2021; How and Alawattage, 2012). If such management accounting practices are not embraced in actors' day-to-day activities, they may remain isolated practices and less likely to interact with other organizational routines. Also, much management accounting research in emerging economies indicates that the adoption of new advanced management accounting practices in these economies faces challenges and even resistance (e.g., Hopper *et al.*, 2009; Ndemewah and Hiebl, 2022; Moses and Hopper, 2022; Nguyen and Hiebl, 2023). For example, based on the analysis of 75 empirical papers from 29 countries (11 African, eight Asian, two Pacific, six Latin American/Caribbean, and two Middle East), Hopper *et al.* (2009) argue that modern management accounting practices are not widely adopted in emerging countries due to the influence of religion and colonialism. Further, in a systematic literature review of 109 empirical articles on management accounting in Africa, Ndemewah and Hiebl (2022) add that apart from the influence of religion and colonialism, the traditional patrimonial practices and core systems of value prevailing in Africa are also major sources for resistance toward Western management accounting practices in Africa. Therefore, the research here may offer insights on integrating routines into existing routine clusters in an emerging economy context.

To summarize here, while there is ample extant management accounting literature which draws on and extends organizational routine concepts to management accounting, it is lacking in two ways. First, such literature has tended to view management accounting routines as an ontological bundle i.e., has considering management accounting routines as a whole. Second, and following from the first, it has not (yet) considered conceptualizations such as routine clusters. This study introduces the latter as already noted, and the next section reviews some literature in this vein.

2.2. Complementarity: interdependence between organizational routines

The previous section has defined organizational routines, and key definitions offered by Feldman and Pentland (2003) and Pentland (2011). The studies now discussed generally accept the definitions offered by such scholars. Several studies of interdependent routines within the management and organization studies literature are apparent. These studies have proposed new concepts including routine boundaries and intersections, bundles, ecologies, and clusters (Rosa

et al., 2020). According to Rosa *et al.* (2020), studies on routine boundaries and intersections (e.g., Dönmez *et al.*, 2016; Spee *et al.*, 2016; Kremser *et al.*, 2019) focus on the ad-hoc coordination of multiple routines through specific performances to interpret how the specific performance of a focal routine may be affected or segregated from other routines. For instance, Spee *et al.* (2016) develop a dynamic framework that theorizes how highly skilled actors accomplish coordination between multiple intersecting routines and their influence on the balancing of coexisting ostensive patterns. Meanwhile, instead of focusing on the coordination between multiple routines in organizational practices, research on routine bundles (e.g., Barreto, 2010; Davies *et al.*, 2017; Prange *et al.*, 2017; Schilke *et al.*, 2018) typically employs a capabilities-based perspective to examine how a particular type of organizational-level outcome is caused by the aggregate outcome of multiple routines (Rosa *et al.*, 2020). For example, by analyzing the case study of the global logistics provider DHL from 1997 to 2006, Prange *et al.* (2017) investigated the transformation and transition of routine bundles composing two distant dynamic capabilities including acquisition-based and innovation-based capabilities. On the other hand, literature focusing on routine ecologies seeks to explore the groupings of routines that are connected through informal and emergent couplings (Rosa *et al.*, 2020). For example, the study by Birnholtz *et al.* (2007) analyzed organizational regeneration to shed light on how a group of actors develops and maintains the coherent ecology of action patterns while the studies by Pentland (2004) and Sele and Grand (2016) contributed to the extant literature by emphasizing that not only human actors, but also non-human actors, play an important role in routine ecologies.

In contrast to research on ecologies – which focuses on unplanned coordination through emergent coupling – researchers and scholars interested in routine clusters have examined the planned aspects in the coordinating of interrelated routines through the programming or designing of interfaces (Rosa *et al.*, 2020). Among such studies, Kremser and Schreyögg (2016) laid the foundation for the study of routine clusters, defining a routine cluster as “multiple, complementary routines, each contributing a partial result to the accomplishment of a common task” (p. 698). In this paper, the ideas by Kremser and Schreyögg (2016) are employed to better understand the interactions between management accounting routines on the application of a new management accounting routine into a production routine cluster. Specifically, Kremser and Schreyögg (2016) argue that programming interfaces allow multiple routines to connect and coordinate with each other via means of performance objectives, making the outcome of each routine predictable for actors that perform the connected routines.

Thus, although there is task interdependence between these routines, programming interfaces allows actors to perform a focal routine without having to rely exclusively on ad-hoc coordination of actions taken in other routines. Furthermore, Kremser and Schreyögg (2016) indicate that the division of labor and designing of interfaces between routines can bring complementarities that drive the dynamics of routine clusters in the long run. Complementarities – in essence routines which fit together well - can help explain if and how new routines are accepted and integrated into a routine cluster. Particularly, the adaptability and ability to integrate new routines into a routine cluster depends very much on the resulting misfit costs for the cluster as a whole. Misfit costs are “the costs (including the risk of ripple effects) of developing new routines and integrating them into the interfaces established by an integrating program architecture” (Kremser and Schreyögg, 2016, p. 715). The higher the misfit costs, the lower the adaptability of new routines to a routine cluster. Conversely, new routines that have low misfit costs are preferable. Kremser and Schreyögg (2016) noted that in their case data, the misfit costs were not due to technology changes, rather the need to integrate into the existing routine cluster. In addition, complementarities as described by Kremser and Schreyögg (2016) also helps explain how the cluster dynamics form an endogenous barrier to organizational adaptiveness since the evolution of the cluster dynamics largely depends on previously developed patterns of differentiation and integration.

Relatedly, in the management accounting and control literature studies on the complementarity of management accounting practices and interrelations/interactions of management control systems have emerged (e.g., Ahrens, 2018; Carlsson-Wall *et al.*, 2021; Davila and Ditillo, 2017; Demartini and Otley, 2020; Mouritsen *et al.*, 2022; Pfister and Lukka, 2019; van der Kolk *et al.*, 2020).² Such studies, while not necessarily stating so – nor drawing on organizational routines as a theoretical framing – involved routine clusters as management controls systems contain multiple related routines which influence employee behavior towards organizational objectives (see Malmi & Brown, 2008). For instance, Ahrens (2018) and Carlsson-Wall *et al.* (2021) studied the role of management control anchor practices where

² The individual studies referenced here include both studies that view the underlying practices as relating more to management control and studies that view the examined practices as part of management accounting. Indeed, the purpose management accounting and control practices is not necessarily the same, but the very same practices (e.g., budgeting) can be used for both management accounting and control purposes (Malmi and Brown, 2008) and associated routines (Quinn and Hiebl, 2018; van der Steen, 2011). Since the present paper predominantly looks into the interaction between routines, the definitional differentiation between management accounting and management control routines is not of prime interest here. In this literature review section, the respective studies are therefore collectively presented as contributing to our existing understanding of routines in the management accounting and control literature.

some management control practices influence and guide other practices in pursuit of more stable and long-term organizational strategic agendas. Pfister and Lukka (2019) suggested that the interrelation between personnel and cultural controls and results controls – studied in the form of stretch goals for productivity that are seemingly impossible to be achieved with current capabilities – enhances the positive effects of the latter control. By defining tension as being composed of two key characteristics which are complementary (positive effect) and competition (negative effect), van der Kolk *et al.* (2020) contributed to the management control literature that draws on complementarity theory by illustrating how tensions can emerge and how managers can balance tensions. Also, Demartini and Otley (2020) suggested that in many organizations, fully interdependent or fully non-interdependent relationships between management accounting and control practices are usually hard to find. Instead, they theorized and found that loose coupling between such practices yields the best outcomes for both organizational effectiveness and process innovation. As argued by Demartini and Otley (2020), such loose coupling can foster organizational effectiveness and at the same time does not stifle organizational innovation.

As is apparent from this brief review, the literature has studied the interaction between management accounting and control practices and its impact on organizational performance and innovation (e.g., Ahrens, 2018; Carlsson-Wall *et al.*, 2021; Davila and Ditillo, 2017; Demartini and Otley, 2020; Mouritsen *et al.*, 2022; Pfister and Lukka, 2019; van der Kolk *et al.*, 2020), but it has not done so by drawing on the concepts of routine clusters and their dynamics. While new management accounting practices may become institutionalized and routinized over time and accepted without (much) resistance (Quinn and Hiebl, 2018), extant literature while drawing on theorizations of organizational routines (e.g., Oliveira and Quinn, 2015; Quinn, 2011, 2014), has not explicitly studied interactions between routines when installing a new management accounting routine into a routine cluster. We thus address this gap by making use of recent advances in organization literature (Kremser and Schreyögg, 2016) to analyze the integration of a new management accounting routine into a routine cluster.

3. Research methods

To address the research objective, a longitudinal case study approach was used. The focus case was N&TCo, a Vietnamese private manufacturing company. N&TCo is one of the largest furniture, kitchen appliance, and home accessories manufacturers in Vietnam. Established in

the 2000s, N&TCo has witnessed strong recent performance and continuous growth, with its annual turnover now reaching approximately €100 million.

N&TCo provides an informative and suitable setting for the following reasons. Firstly, N&TCo's manufacturing operations require a series of repetitive operations and actions performed by organizational actors to achieve the highest productivity and uniform quality (i.e., routines). Furthermore, as N&TCo is also an exporter to international markets, changing or adopting new routines is inevitable given fierce competition and the volatility of the international market. Also, N&TCo has designed routine clusters to ensure its tasks are practiced in a smooth and efficient manner. Thus, the highly standardized operations enable us to directly observe the application of a new routine into a routine cluster. Finally, N&TCo is continuously implementing and updating new management accounting practices to ensure their production activities are carefully monitored and goals are being met. These features of N&TCo enable us to observe routine changes, the application of new management accounting routines and the interactions between management accounting routines.

Data for the study were primarily obtained from extensive interviews and discussions with key actors at N&TCo. In this vein, a total of 21 semi-structured interviews were conducted during 2018 and 2019 with 13 staff members at the Head Office and the company's factories. Some interviewees were visited more than once to provide opportunities to ask follow-up questions and clarify information obtained from the initial interviews. The interviews ranged from 20 to 82 minutes, averaging at 50 minutes and totaled approximately 18 hours (see Table AI for a list of interviews). A total of eleven of 21 interviews were voice recorded. For the remaining interviews, extensive field notes were taken, as some respondents felt insecure with recording – a procedure that is often experienced when interviewing lower-level actors in emerging countries who may fear repression (e.g., Nguyen and Hiebl, 2023). These field notes were taken during and after the interviews and transcribed within 24 hours. In addition to the formal interviews, the data was enriched by collecting publicly available information including media and government reports on N&TCo's production activities.

From a theory perspective, as noted earlier routine clusters as per Kremser and Schreyögg (2016) is used to comprehend the impact of the interaction between management accounting routines on the introduction of a new management accounting routine into a routine cluster. The work of Kremser and Schreyögg (2016) is useful here for several reasons. First, they

focused on the integration of new routines into a routine cluster, which is appropriate in this paper's case company, N&TCo, as it has been continuously applying new management accounting routines to adapt to fierce competition, strict standards from Western customers and/or the rapid change of international markets. Second, following the logic of Kremser and Schreyögg (2016), complementarity between new management accounting routines and a routine cluster plays an important role in integrating a new management accounting routines into a routine cluster. In particular, a new management accounting routine can be viewed as complementary to existing management accounting routines if the misfit costs for the entire routine cluster associated with the introduction of the new management accounting routine are lower than the perceived benefits for the entire cluster.

Guided by the notion of routine clusters, all data collected was analyzed as per the following procedures. First, based on the initial interviews, we drafted an overall story of the current situation of the case firm, how they applied management accounting practices, and which new management accounting practices were introduced. After each interview, this story was refined and expanded upon. After the first wave of interviews during the summer of 2018, it became clear that an intriguing part of the story of N&TCo was a relatively clear and well-working cluster of production routines. It was also noticed that attempts were made to introduce new management accounting practices to better cater for the demands of external stakeholders (most importantly, its main customer LeHolding, detailed below). We thus searched existing literature for frameworks to make sense of the introduction and potential routinization of new practices in such routine clusters and discovered the (then) relatively new framework of Kremser and Schreyögg (2016). In the second and later waves of data collection in 2019, we more specifically focused on the new management accounting routine, how it interacted with existing routines and the main actors involved in the routine. Our overall research approach therefore could be viewed as abductive (Lukka and Modell, 2010) as it started with empirics, then drew on insights from the literature again and then went back to the field level, before using theory again to frame and report our insights.

Correspondingly, the findings are grouped into three main topics. The first topic, which will be discussed in Section 4.1, deals with the background of N&TCo and its production routines cluster. Here, the notion of routine clusters (Kremser and Schreyögg, 2016) is used to establish the production activities of the factories at N&TCo as a production routines cluster. The second topic, detailed in Section 4.2, concerns the introduction of a new management accounting

routine into the production routines cluster. Why N&TCo decided to apply a continuous improvement routine as a new management accounting routine will be discussed, and how the company tried to integrate this routine into the production routines cluster is detailed. Finally, based on the logic of complementarities suggested by Kremser and Schreyögg (2016), the third topic is presented in Section 4.3. This explores the role of complementarity between the new continuous improvement routine and a production routine cluster in integrating the new continuous improvement routine into a production routine cluster. Furthermore, the interaction between two management accounting routines – an existing performance evaluation and rewards routine and the new continuous improvement routine – and its impact on the application of the new continuous improvement routine into the production routines cluster is examined.

4. Findings

4.1 Background to N&TCo's organizational routines

By 2019, N&TCo's production scale had expanded to seven factories across Vietnam. With a wide range of products, N&TCo had been selected as one of the main suppliers to LeHolding³ one of the largest retail groups in Europe. N&TCo's organizational chart (see Figure 1), internal corporate governance procedures and code of conduct were available to the researchers. These regulations covered all related activities of the company, defining the function and duties of the Board of Directors and all departments – i.e., they are formal written rules in the context of literature mentioned earlier (e.g., Quinn, 2011; Bertz and Quinn, 2014).

³ We have changed the name of the company to ensure its anonymity.

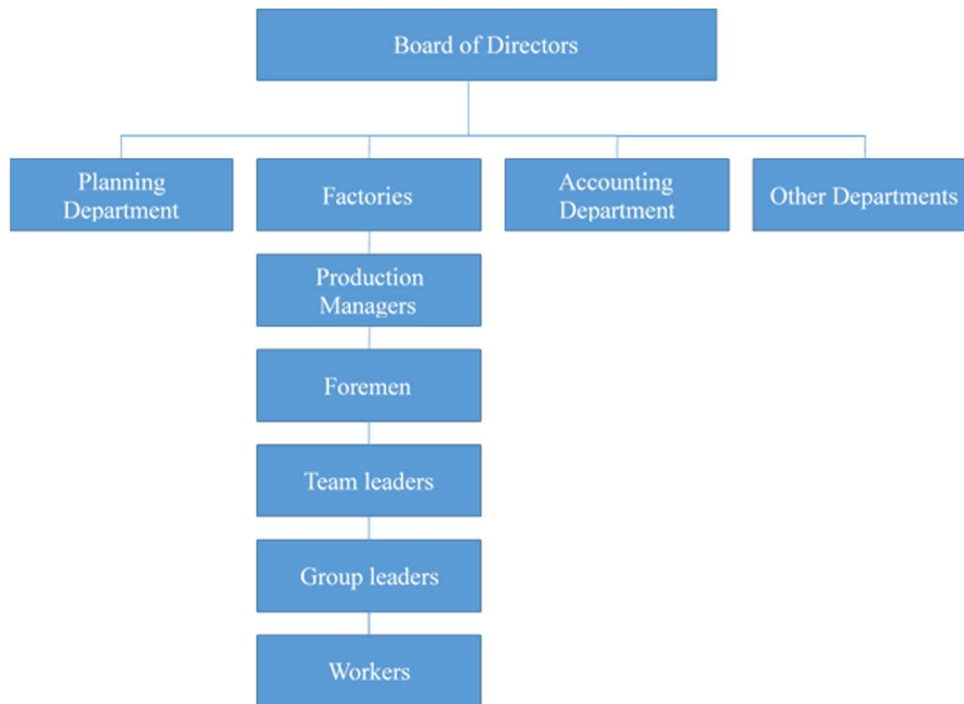


Figure 1. N&TCo’s organizational chart

The company is headed by a Board of Directors and a Chief Executive Officer (CEO) manages the entire operation. Deputy directors oversee separate areas such as manufacturing, exporting, or business activities. The firm features various independent functional departments which coordinate with each other to achieve common goals e.g., the accounting department, quality control department and production department. Their integration was explained to us as follows:

The company’s hierarchy has many functional departments. The main management of the company belongs to the Board of Directors including the Chairman, CEO, and deputy directors while the main management of functional departments is the accounting department, quality control department, or manufacturing department. (Interview, Production Manager, Factory A, 2018)

The primary focus of this study is a cluster of production routines at N&TCo ‘s factories – similar to the routines studied by Kremser and Schreyögg (2016). This choice was to an extent driven by the fact that the best empirical access was to the production function. As indicated above, N&TCo is headed by a Board of Directors who are responsible not only for managing and monitoring the operation of the factories, but also for developing and making business decisions and policies, strategic goals, or business plans. Production managers are responsible for the production activities of their factories and report to the Board of Directors. The main

tasks of these mid-level managers are to implement the plans, goals, and policies set out by the senior managers, communicate and translate information and policies from top management to lower management, assign and manage the operations of production groups and lower-level managers, and report performance to the senior managers. Each production manager supervises several lower-level managers. The production processes in each factory have four main stages - material preparation, component manufacturing, assembling, and finishing. Each stage is managed by a foreman⁴ and divided into several production teams, managed by team leaders. Each production team was divided into production groups managed by group leaders. Usually, the key tasks of group/team leaders are to assign and manage production activities of workers, assuring quality and production output, solving production problems, and reporting performance to senior managers. The production groups were made up of dozens to hundreds of workers, all directly involved in production.

In line with the four requirements for routines as stated by Pentland (2011), evidence was clear that the production and production management activities involved multiple actors from mid-level managers to workers. These activities can thus be regarded as organizational routines as they were (1) repetitive, (2) had a recognizable pattern of (3) interdependent actions, and (4) were carried out by multiple actors. To make optimal use of the skills of managers and workers, N&TCo applies mass production methods in which each factory featured multiple workstations and production lines to enable specialized production. This enabled the company to produce thousands of similar products each month at a low cost. In other words, because the division of labor was clearly defined, as were the functions and duties of each manager and worker, the operations of dozens of the mid- and lower-level managers and many the workers were repetitive. In addition, the workers' production activities had a recognizable pattern of action through three main steps of production – receiving input, performing assigned tasks, and creating expected output. A similar picture was found in the mid- and lower-level managers as their duties were composed of a pattern of other smaller interdependent activities including taking direction from top management, assigning and managing the operations of workers, and reporting performance to higher-level managers.

As an organization typically has multiple routines and routine clusters, Kremser and Schreyögg (2016) suggest that to understand these clusters, it is necessary to group specialized routines

⁴ The term foreman is used throughout for consistency and no implication is implied by its use. Staff in these positions were male and female.

into separate clusters such as production, marketing, research, or logistics to reduce internal complexity. Routines can be clustered based on the design decisions of organizational agents, objects (e.g., products or customers) or activities (e.g., production, accounting, marketing) if the goal of routine clusters is to exploit complementarities between interrelated routines (Kremser and Schreyögg, 2016). For this study, based on activities as suggested by Kremser and Schreyögg (2016), production routines at N&TCo can be grouped into a production routines cluster.

To promote the staff performance and productivity, the Board of Directors utilized a performance evaluation and reward scheme. For example, performance evaluation of the workers at the factories included attendance and productivity indicators, and based on performance, salaries and bonuses could be increased. Here, we treat the performance evaluation and reward mechanism as a management accounting routine: performance evaluations are viewed as a widespread and typical management accounting and control practice (e.g., Burns *et al.*, 2013; Malmi and Brown, 2008). In the case of N&TCo, this practice also fulfills the basic four components of an organizational routine as suggested by Pentland (2011). For instance, the performance evaluation and reward routine were not only performed repetitively every month/quarter, but was also conducted by multiple actors ranging from top managers to lower-level managers. The routine also consisted of a recognizable pattern of interdependent actions from evaluating and scoring the performance of staff to be rewarded.

The production routine cluster and management accounting routines of the workers and mid- and lower-level managers at the factories of N&TCo witnessed recent changes when the Board of Directors encouraged a reduction in production costs, sought to increase productivity and to increase product quality. This created the opportunity to explore how a new management accounting routine (i.e., on continuous improvement) could be integrated into the production routines cluster and how the interactions affected the adoption of the new routine into the production routines cluster.

4.2. Embedding a new continuous improvement routine into the production routine cluster

Like other Communist countries, Vietnam regularly witnesses social movements induced by central government. These are more akin to a call for action and are not legally binding. At the time of this research, there was an ongoing social movement in the Vietnamese business

landscape termed a “continuous improvement movement” by interviewees. This movement was like continuous improvement programs adopted by many Western organizations in the past three decades. In Western organizations, continuous improvement programs have usually been adopted with the aim of creating “a culture of sustained improvement targeting the elimination of waste in all systems and processes of an organization” (Bhuiyan and Baghel, 2005, p.761). Bhuiyan and Baghel further propose that such continuous improvement “involves everyone working together to make improvements without necessarily making huge capital investments” (2005, p.761). Interviewees at N&TCo indicated that the ongoing social movement in Vietnam held similar goals, but was not restricted to individual organizations and it was perceived as the government’s willingness to foster continuous improvement ideas in the Vietnamese economy more generally.

Although N&TCo’s senior management encouraged its mid- and lower-level managers and workers to actively participate in the continuous improvement movement, it had been unsuccessful as of 2018 as it had been applied in a spontaneous and infrequent manner. For instance, the Production Manager of Factory A explained:

In the past, it was called the launching of the [continuous improvement] movement. It was not a norm or regulation, so it was not mandatory to perform [...]. It was not ineffective but rather not regular. It still had improvement, but it was spontaneous. (Production Manager, Factory A, 2018)

N&TCo’s senior management started enacting decisions and formal instructions on the application of a continuous improvement routine into its production routine cluster in early 2018. The main reason it officially adopted this approach came from pressure by LeHolding – a single customer representing 70-90% of their revenue – and not from the social movement efforts of the Vietnamese government. Specifically, N&TCo had been under pressure from LeHolding to reduce its product price by 2% per year. At the same time, LeHolding introduced stricter production standards in recent years: e.g., having proof of origin, meeting import/export document requirements, and obtaining Forest Stewardship Council (FSC) certification. This led N&TCo to apply a continuous improvement routine into its production cluster to compensate for losses due to meeting LeHolding’s new requirements. The Deputy Director of N&TCo explained:

Production for export is large; the orders are stable, but the profitability is low; the company is annually under pressure to reduce its selling price [...]. FSC 100% is also a completely new requirement to us. And we do not have any policies to reduce these costs, especially when developing countries have to comply with European standards [...] Therefore, to reduce costs, it is necessary to intensify the improvement activities. (Deputy Director, 2018)

To integrate a continuous improvement routine into the production cluster, the Board of Directors set continuous improvement goals and mandated that the respective mid- and lower-level managers calculate costs and benefits of their improvement initiatives, or otherwise prove that their initiatives brought benefits to the company. In addition, senior management developed an evaluation and measurement system to assess improvement initiatives, and adapted reward mechanisms accordingly. Particularly, senior managers set the goal that each person in each factory must contribute at least one improvement initiative per month. Setting such goals was to facilitate the placement of continuous improvement into a Key Performance Indicator (KPI)-based evaluation as one of our interviewees explained:

When the improvements started to be included in the report; and the model was standardized; we started to aggregate and put it into the KPIs evaluation [...]. The goal is that every month, every person has to make at least one suggestion for improvement. Thus, if there are 200 people, there will be 200 improvement initiatives in a month. You can compare the number of these improvement initiatives to the target number of improvement initiatives set by the company. (Manager of Quality Control Department, 2018)

Furthermore, senior management established a so-called Continuous Improvement Committee (CIC) which was headed by the company chairman. The other members of this committee included the remaining members of the Board of Directors, the factory production managers, workshop foremen, and managers of the electromechanical departments. In addition to the CIC, each factory had its own continuous improvement subcommittee. The production manager of the factory was also the head of the subcommittee, with other members being foremen, team leaders, group leaders who directly managed production in their workshops, and members of the electromechanical department - responsible for managing and repairing the equipment, machines and safety devices used in the production process. The tasks of the mid- and lower-level managers at the continuous improvement subcommittee were not only to launch the

continuous improvement movement in their areas and teams, but also to aggregate and report improvement initiatives on a quarterly basis to the CIC.

Notably, the Board of Directors required that management accounting techniques be applied in reporting continuous improvement results. For every improvement initiative, a quantified analysis of costs and benefits was required. The continuous improvement report included categories such as improvements in productivity, quality, safety, and the environment. Mid-level managers and some lower-level managers (such as foremen) had to calculate and estimate how much their improvements benefited the company. Thus, the initiators of the improvement initiative had to convert benefits and costs of their improvements into monetary values and show that the benefits of the improvements were greater than the costs incurred of the improvement initiatives. That is, the objective was for every improvement initiative contributed positively to the firm's earnings before interest and taxes (EBIT). For improvements that could not be converted into monetary terms – e.g., improvements in quality or safety – managers could add notes in the results box of their reports to show how the innovation improved production as well as benefited the company.

The continuous improvement activities of N&TCo can be considered a management accounting routine for three reasons. First, from a management accounting view, actors at factories had to calculate the benefits (mostly cost savings) and additional costs of improvement initiatives, preferably in terms of how much corporate earnings would benefit. That is, the proposers of such ideas had to apply a cost and benefit analysis of their suggestions to inform corporate management. Second, and related, this information was in turn used by managers to monitor performance on the outcome of the improvements and thus make decisions. These two items together mirror a typical textbook definition of management accounting (e.g., Burns *et al.*, 2013; Horngren *et al.*, 2014) i.e., collecting information useful for managers in decision-making. Third, the continuous improvement activities satisfy the four essential components of an organizational routine as defined by Pentland (2011). In particular, the implementation of the continuous improvement approach was repetitive and performed by multiple actors as dozens of mid- and lower-level managers and hundreds of workers at N&TCo's had to derive improvement initiatives regularly and contribute to continuous improvement reports on a quarterly basis; it had a recognizable pattern; it had interdependent actions including giving improvement initiatives, calculating the benefits and costs of the improvement initiatives, executing the reports for the continuous improvement subcommittees,

awaiting approval from the continuous improvement subcommittees, and reporting to the CIC. Interestingly, although the continuous improvement initiative stemmed from a Vietnamese government movement, this movement could not be internalized as a rule as no formalized way to do things was apparent (Burns and Scapens, 2000; Quinn, 2011). As recounted above, initial efforts to routinize the movement internally were “not regular” and thus not routinized. However, when a more concrete need for continuous improvement was requested by LeHolding, an ostensive routine (Feldman and Pentland, 2003; Quinn, 2011) was present in that management at N&TCo had had recent experience based on the government movement, and likely a general understanding of what continuous improvement implies.

4.3. The interaction between management accounting routines

Having established the continuous improvement initiative as a routine, the interaction between it and existing performance evaluation/reward routines, as well as its integration into the production routines cluster is now analyzed.

In early 2018, N&TCo used their existing performance evaluation/reward routine to integrate the new continuous improvement routine into the production routine cluster. This was achieved by amending KPIs used to evaluate performance of the mid- and lower-level managers. These KPIs consisted of seven indicators on productivity and product quality, which included new continuous improvement indicators and were ranked in order of importance as perceived by the Board of Directors. The more important the indicator was, the higher its coefficient was in calculating KPIs – which in turn determined manager’s salaries. However, the continuous improvement ideas were classified as the least important KPI dimension, as explained by the Production Manager of Factory B:

The importance of each item in the KPIs will be divided into level one, level two, level three [...]. The most important item will be at level one. Meanwhile, the level of importance of the continuous improvement item is at level seven. It means that level seven is just encouragement. (Production Manager, Factory B, 2018)

As the continuous improvement goal was that each manager and worker must offer at least one improvement initiative each month, the continuous improvement score in the KPIs was calculated as the number of improvement initiatives each month in the manager’s factory/workshop. According to the Production Manager of Factory A:

If everyone has initiatives, it gets four points. If 50% of the workforce has improvement initiatives, it gets two points. If no worker gives an improvement initiative, it gets zero points. (Production Manager, Factory A, 2019)

While the production managers were accountable for the improvement initiatives developed at their factories, the KPIs were not included in recurring evaluations of individual workers' performance. That is, the performance evaluation of workers remained unchanged, and did not include any continuous improvement indicators. However, the originator of a continuous improvement initiative could get extra awards and bonuses. To encourage all actors to integrate the continuous improvement routine into their production routine cluster, N&TCo reviewed, graded, and awarded high-quality innovation initiatives on a quarterly basis. The CIC reviewed and scored the most innovative ideas based on two criteria, namely (1) applicability of an improvement initiative to other factories and (2) economic effectiveness of the improvement initiatives, as one of interviewee explained:

The next criterion is its effectiveness. An initiative which makes 100 million VND⁵ will be more appreciated than the one that only makes 5 or 10 million VND. (Manager of Quality Control Department, 2018)

Members of the CIC participated in scoring the most innovative ideas. The Board of Directors' votes accounted for 50% of the total points, with other members votes weighted at 50% collectively. After that, the CIC proceeded to reward the "best" initiatives based on the scores of the improvement initiatives. Higher scores implied a greater monetary reward for the initiatives' initiators. The Production Manager of Factory A added:

After that, we evaluate and give scores. And then we make the reward corresponding to the scores. The Committee will consider how much money will a point of improvement be rewarded. Thus, if an initiative has many points, it can have many bonuses. (Production Manager, Factory A, 2018)

The total amount spent on bonuses for improvement activities quarterly was not fixed, as it depended on the annual revenue and budgets. Another bonus policy for continuous improvement activities existed, whereby mid- and lower-level managers were empowered to

⁵ One hundred million Vietnamese Dong (VND) equate to about €4,000 as of March 2022.

immediately reward about €2 - €4 to staff who developed good improvement ideas. However, the Board of Directors did not provide a specific guideline for these immediate rewards. Instead, the mid- and lower-level managers set their own criteria and prepared their own paperwork to assign immediate bonuses to employees. After being approved by the production managers, the workers could go to the accounting department to receive their bonuses.

Once N&TCo decided to apply a new continuous improvement routine into the production routine cluster, most interviewees agreed that the routine fitted well with the production routines of the mid-level managers and some groups of the lower-level managers such as the foremen and team leaders. Specifically, interviewees suggested that the number and quality of improvement initiatives from production managers, foremen, and team leaders had increased significantly since the adoption of the continuous improvement approach. A potential reason for this development was that the production managers, foremen, and team leaders were used to calculating cost savings and benefits that would arise from their initiatives. The Secretary of the CIC remarked:

The number of factories' improvements [in 2019] is increasing compared to previous years. The production managers were trained on a Lean Six Sigma course in which they were taught how to convert the costs and benefits in monetary terms. Therefore, their ability to identify improvements, as well as their ability to convert the benefits and costs of improvements into money has been improved. (Secretary of the Continuous Improvement Committee, 2019)

The application of the continuous improvement routine into the production routine cluster, and the necessity to calculate cost savings and benefits, shifted the focus of the production managers, foremen, and team leaders from a production orientation to an economic orientation. In early interviews with mid-level managers and some lower-level managers, interviewees initially focused on managing input, productivity, and output quality. However, with the adoption of the continuous improvement routine during the time of our investigations, these interviewees increasingly mentioned calculating the benefits and costs of their improvements and demonstrated how much money or value their improvement initiatives could bring. Over the course of the interviews, interviewees more and more used economic terms such as “profit”, “benefit”, “cost”, “efficiency”, “value”, or “money”. In other words, the integrated of the continuous improvement routine into the production routine cluster, as well as the necessary underlying cost calculations therein, changed the production orientation of a group of actors in

the company from focusing on the quantity and quality of output to include economic efficiency. This is exemplified by a quote from the Production Manager of Factory A:

Previously, people only focused on their assigned tasks. But now they have to start thinking more, rather than just be concerned with their output numbers as before. They have to think about how to have good innovations for the company. (Production Manager, Factory A, 2019)

At the same time, when directly asked for shifts in their thinking, many mid- and lower-level managers interviewed claimed that the continuous improvement routine did not affect their production routines cluster, as it only required thinking and creativity. In fact, many interviews did not view the generation of continuous improvement suggestions as “work”, but only as “thinking”. For example, the Foreman of Factory B remarked:

Our work is not affected at all [...] It [the continuous improvement activities] only requires thinking, no matter we are at work or at home. It doesn't require us to make continuous improvement during working hours. That is just thinking only. (Foreman, Factory B, 2018)

Some lower-level managers argued that the main reason that they integrated the continuous improvement routine into their production routines was their passion for their work and desire to learn. According to the Foreman of Factory A:

In continuous improvement, it [improvement ideas] does not come out of itself. But it comes from the passion for the job. You have to love the job, then you can have ideas for improvement. (Foreman, Factory A, 2018)

Meanwhile, mid-level managers believed that putting continuous improvement into their KPIs was one of the main motivations to participate in continuous improvement, even though continuous improvement accounted for a relatively small proportion of performance compared to other indicators such as productivity or product quality. One interviewee explained:

There is no reprimand, but there is a performance evaluation. For example, a manager has two or three initiatives every month, while another manager has no initiative at all. When evaluating the performance of an individual, the performance results of the manager who has no initiative are also limited. Therefore, the level of consideration, wages, and salary increases will be affected. (Production Manager, Factory A, 2018)

The above quote also reveals another factor which made production managers, foremen, and team leaders adapt rather smoothly to the continuous improvement routine: the new routine helped them to improve other KPI indicators on productivity or product quality, in turn increasing their overall salaries, and bonuses. The Production Manager of Factory C added:

This is because the salary of the managers will be multiplied by the KPIs [...] When improvements are made, the managers' productivity will also be higher. That will increase the productivity indicators in the KPIs of these managers. In addition, people try to come up with improvement ideas to increase continuous improvement indicators in their KPIs. These two indicators affect their KPIs as well as their salaries. (Production Manager, Factory C, 2019)

Lower-level managers also believed that apart from increasing KPIs and salaries, the continuous improvement routine made their production routines cluster easier and more convenient to perform as noted by one informant:

We only think about how to make more continuous improvements so that it can help us first, then the company. We want to find new improvements to make our work easier, more efficient, increase productivity or reduce labor insecurity. (Foreman, Factory B, 2018)

Although the dedicated reward policy for continuous improvement did not seem to be an important factor in motivating actors to engage in the routine, it made them more "excited" to engage in innovation. The Foreman of Factory B added:

The reward of the Continuous Improvement Committee is good, but it is not the most important factor for us. Of course, when receiving the rewards, everyone in the company will be more excited to participate in this activity. (Foreman, Factory B, 2018)

In contrast to the production managers, foremen, and team leaders, there were less group leaders who regularly engaged in making suggestions for improvement. During the field work, there were no improvement initiatives from ranks below team leader. As the group leaders held the lowest managerial positions, the continuous improvement indicators occupied lower proportions of their KPIs compared to higher-ranked managers. Consequently, group leaders did not have much incentive to engage in the continuous improvement routine, or to encourage their workers to engage in the routine. Similarly, given that the performance evaluation routine

of the workers included only attendance and productivity indicators, general workers were uninterested in making improvements.

Notably, the top and mid-level managers did not want to pressurize group leaders and workers, primarily due to high employee turnover rates - due to wage levels for lower-level managers and workers being less competitive relative to local peers. Given such high turnover, the continuous training of new employees prevented group leaders and workers from having sufficient knowledge of the firm and its operations to make improvement suggestions and/or have time to develop such suggestions. The Production Manager of Factory B explained:

Yes, the employee turnover rate of my factory even is higher than that of Factory A [...] That is too difficult because there are so many new workers in the factory, so I have to train them a lot. How can they make improvements when the works in the factory are very new to them? (Production Manager, Factory B, 2018)

There was also a perception that the immediate bonus policy for good initiatives was relatively low for group leaders and workers, and it was not attractive enough for them to integrate the continuous improvement routine into their production routines cluster. According to the Foreman of Factory A:

That is only worth 40,000 to 100,000 VND. It is not remarkable. For example, the current salary of a worker is 5 million VND. It will be another story if the bonus is 4 million VND. They do not think about immediate rewards. They only think about how the improvement has helped them in the first place. (Foreman, Factory A, 2018)

Mid-level managers also suggested that another factor influencing the integration of the continuous improvement routine into the production routines cluster of the group leaders and workers was the level of expertise. Many workers came from poor areas and mountainous provinces of Vietnam and had relatively low qualifications. On the other hand, production managers, foremen, and team leaders were all trained in the continuous improvement approach through the Lean Six Sigma courses; the group leaders and workers were only briefly instructed by foremen and team leaders on filling out forms for the continuous improvement initiatives. Therefore, group leaders and workers were not fully informed about the continuous improvement approach and the necessary cost calculation techniques therein.

Finally, although the continuous improvement routine was adapted well to the production routine cluster from the perspective of production managers, foremen, and team leaders, it also indirectly affected group leaders and workers. Senior and mid-level managers believed that the application of the continuous improvement routine enabled the production routines cluster to become leaner by reducing waiting time between production stages, reducing redundant operations, or minimizing unnecessary movements in production. It thus enabled N&TCo to increase productivity, reduce costs, reduce labor power, or even improving workplace ergonomics. For instance, the Deputy Director of N&TCo explained:

The continuous improvement approach helped our factories to promote lean manufacturing. First, continuous improvement makes the production system always ready including production stages, machinery, and supplies. In addition, via this approach, our factories reduced ergonomics costs such as reducing redundant manipulation and operations as well as fix other manufacturing errors. (Deputy Director of N&TCo, 2019)

5. Discussion and concluding comments

As mentioned, Kremser and Schreyögg (2016) have explored the complementarity of new routines to a routine cluster and integrating new routines into a routine cluster. They utilized a semi-historical approach, which they admit has limitations. Here, the N&TCo case draws on interviews of actors who were actively and recently involved in a similar process. As outlined earlier, the extant management accounting literature, while taking on board certain routine conceptualizations from the organizational literature, has not explicitly explored such interactions and routine clusters as described by Kremser and Schreyögg (2016). Given that management accounting practices are implemented and routinized on an ongoing basis in many organizations worldwide, the integration of new management accounting routines into a routines cluster is a topic of relevance to corporate practice and deserving of academic research attention, the latter to add to our knowledge of management accounting routine dynamics.

Based on the case of N&TCo, the findings are broadly in line with the logic of complementarities proposed by Kremser and Schreyögg (2016). The findings indicate that the new continuous improvement routine had been well integrated into the production routines cluster as it had low misfit costs i.e., it did not challenge “the behavioral integrity of the cluster” (Kremser and Schreyögg, 2016, p. 702). Rather, it required some brainstorming and thinking

by mid- and lower-level managers to suggest improvement initiatives and demonstrate how their suggestions benefited the company. As mentioned in the previous section, these managers were trained in continuous improvement through Lean Six Sigma courses. Quinn (2011, p.346) notes on routines that “the ostensive dimension serves as the abstract understanding of a routine and is drawn upon by actors to guide, account for and refer to specific performances of the routine”. Thus, at NT&Co mid- and lower-level managers had an abstract understanding of what continuous improvement means (through their Lean Six Sigma training) and could act out the new routine easily by drawing on this ostensive dimension. Given the production routines cluster already included various routines around quality control, the new routine was complementary. The case data from NT&Co thereby supports the work of management accounting researchers such as Quinn (2011), Oliveira and Quinn (2015) and Hiebl and Quinn (2018) who all refer to an ostensive routine dimension. The data adds to this knowledge base by highlighting how an ostensive understanding of a “to be enacted” management accounting routine (continuous improvement at the case) may aid its integration to an existing routine cluster. The approach to the analysis here, drawing on Kremser and Schreyögg (2016) also adds to the aforementioned work by clearly distinguishing management routines are not one ontological bundle, they are best unpacked to analyze their dynamics.

Although this study thus generally supports Kremser and Schreyögg (2016) on the logic of complementarities, it adds to their work by showing that apart from misfit costs, other factors influence the integration of new routines into a routine cluster. In particular (see above), the case study highlights that even after two years of a new continuous improvement routine, only experienced and trained actors at managerial levels – production managers, foremen, and team leaders – integrated this new routine into their work. In contrast, actors at the lowest levels – group leaders and workers – did not integrate this new routine into their work. In addition to “passion for work” and “desire to learn” on behalf of foremen/team leaders, the presence of an abstract understanding of continuous improvement (i.e., an ostensive routine) helped integrate the new routine. In contrast, lower levels of expertise, and arguable an absence of a similar ostensive understanding made it more difficult for group leaders and workers to adopt the continuous improvement routine.⁶ The level of expertise in the underlying routines cluster held by the actors involved in the new routine could thus be viewed as moderating the relationship

⁶ It could be argued that missing expertise and education per se represents misfit costs. However, per the definition of Kremser and Schreyögg (2016), misfit costs are the costs of developing new routines and integrating them into the interfaces established by an existing routine architecture. This definition does not seem to encompass involved actors’ missing expertise and education.

between low misfit costs and the smooth integration of new routines into an existing routines cluster. If actors command a high level of expertise (including ostensive understandings), the case data suggests that the relationship between low misfit costs and a smooth integration of a new routine is more pronounced⁷.

The main contribution of this study is thus on the interaction and complementarity between management accounting and other routines. In particular, this study not only complements the notion of routine clusters by Kremser and Schreyögg (2016) but also enriches research on the interaction between multiple management accounting practices and the complementarity of management accounting practices (e.g., Ahrens, 2018; Carlsson-Wall *et al.*, 2021; Davila and Ditillo, 2017; Demartini and Otley, 2020; Mouritsen *et al.*, 2022; Pfister and Lukka, 2019; van der Kolk *et al.*, 2020). The study adds to this literature that apart from low misfit costs, respective actors' passion for work, level of expertise/training, that complementarity between management accounting routines played an important role for the integration of a new management accounting routine into a routine cluster. Specifically, this research shows that the observed interaction between the existing performance evaluation/reward routine and the new continuous improvement routine could be considered complementary only for most mid- and lower-level managers. For these actors with higher levels of expertise in the underlying routines cluster and an ostensive routine in their consciousness (Feldman and Pentland, 2003; Oliveira and Quinn, 2015; Quinn, 2011), the new routine was rather complementary. It also linked to the performance evaluation/reward routine by integrating rewards for continuous improvement initiatives through respective performance indicators. In other words, as the performance evaluation/reward routine and the continuous improvement routine of most mid- and lower-level managers were integrated, enhancing the continuous improvement routine would increase their performance appraisal, income and bonuses. As a result, for these actors the integration of the new management accounting routine in the existing routine cluster required little effort, as it did not threaten their existing behavior (Kremser and Schreyögg, 2016) – and rewarded them financially.

In addition, our case shows that these two management accounting routines were not just complementarity in terms of not substituting each other. Rather, the integration of continuous improvement indicators in the performance evaluation/reward routine was intertwined. When

⁷ The question of why lower-level staff were not offered training on the new routine was not explored in this research.

interpreted with the help of the loose coupling notion suggested by Demartini and Otley (2020), it could be argued that routines being intertwined are more closely coupled. The case here adds evidence of such closer coupling and implies that future research on the interaction between management accounting and control practices may need to further distinguish the exact ways management accounting practices complement each other. This study shows that it is possible to at least distinguish between (i) the cases where such practices may complement each other by “standing side-by-side” and not substituting each other in fostering some desired effect, and (ii) cases where the outcome of one management accounting practice (here, the new continuous improvement routine) features in another management accounting practice (the performance evaluation/reward routine). Existing research on the interaction between management accounting and control practices and the complementarity between management accounting practices (e.g., Ahrens, 2018; Carlsson-Wall *et al.*, 2021; Davila and Ditillo, 2017; Demartini and Otley, 2020; Mouritsen *et al.*, 2022; Pfister and Lukka, 2019; van der Kolk *et al.*, 2020) has not distinguished between such different forms of complementarity. For the lowest-level managers and workers, intertwinedness was not observed as the continuous improvement routine did not feature in their reward schemes, which may be more in line with the definition of loose coupling by Demartini and Otley (2020). The new routine could still be regarded as complementary for the workers and group leaders at N&TCo as they could earn extra awards and bonuses, but the outcomes of the new continuous improvement routine was not intertwined with their performance evaluation/reward routine. Thus, apart from their missing experience and education, evidence of a lack of intertwinedness was apparent, which left the lowest-level actors less interested in engaging heavily in the continuous improvement routine.

Finally, the results contribute to a small extent to literature on management accounting in less developed economies. Unlike most existing studies (e.g., Hopper *et al.*, 2009; Ndemewah and Hiebl, 2022; van Helden and Uddin, 2016; van Helden *et al.*, 2021), the case here does not suggest that the actors at N&TCo adopted the new continuous improvement routine solely due to external pressure (from LeHolding). In contrast, given the intertwinedness of the new continuous improvement routine and the existing performance evaluation/reward routine, as well as the ostensive routines being present, mid- and lower-level managers at N&TCo did not resist the new routine as observed in other case studies of emerging-country organizations (e.g., Aliabadi *et al.*, 2021; Harahap, 2021; How and Alawattage, 2012; Moses and Hopper, 2022; Nguyen and Hiebl, 2023). This case research thus suggests that such resistance may be lower if newly introduced management accounting practices are well intertwined with existing

practices. A proviso should be noted however in that existing management accounting practices such as the performance evaluation/reward routine were not seen critically in the first place by any interviewees.

Like any research, the findings presented here are subject to limitations. First, although it was planned to conduct interviews with all hierarchical levels to get a comprehensive view of routine changes and interactions, fewer opportunities presented to interview team leaders, group leaders, and workers due to their fear of disclosing sensitive information to the public media (cf. Nguyen and Hiebl, 2023). Thus, while the narrative is based mainly on views of senior managers, mid-level managers, and some lower-level managers, their comments were continuously verified to minimize individual bias through cross-checks between informants throughout the interview process. Second, due to limited access, only interactions between the performance evaluation and reward routine and the continuous improvement routine and its effect on the adoption of a new management accounting routine into a routine cluster could be studied. Thus, an important avenue for future research is to examine interactions between the management accounting routine cluster and other routine clusters in N&TCo and of course other firms. Third, interviews were conducted and data collected over a time frame of two years. It was thus not possible to observe the evolution of the new routine in the production cluster in the longer term. Further research might therefore analyze integrations of new routines into routine clusters, and the evolution of a routine cluster, across a longer time frame (c.f. Quinn, 2014).

To finish, further future research on other forms of complementarities and other aspects of routines being intertwined is needed. For example, future studies might explore if there are other forms of complementarities that facilitate the integration of new routines into a routine cluster apart from routines being intertwined; explore to what extent should routines be intertwined to enhance the integration of new routines into a routine cluster; explore what kind of routines can/cannot be easily intertwined to each other; or, explore what challenges exist to intertwine multiple routines and how to overcome them. Such research can only enhance the initial effort made here to introduce the concepts around routine clusters to management accounting research.

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Appendix

Table AI. Overview of interviews

No.	Date of interview	Interviewee	Duration of interview (min.)
1	26/04/2018	Deputy Director of N&TCo	64
2	11/05/2018	Production Manager of Factory A	55
3	06/06/2018	Production Manager of Factory A	58
4	10/07/2018	Manager of Quality Control Department	59
5	12/07/2018	Manager of IWAY Board	20
6	12/07/2018	Former Secretary of the Continuous Improvement Committee	45
7	20/07/2018	Foreman of Factory A	58
8	31/07/2018	Foreman of Factory B	65
9	05/08/2018	Production Manager of Factory B	63
10	13/05/2019	Production Manager of Factory A	45
11	23/05/2019	Staff of Planning Department, Secretary of the Lean Sig Sigma Committee	52
12	23/05/2019	Production Manager of Factory B	45
13	13/06/2019	Production Manager of Factory A	45
14	26/06/2019	Foreman of Factory B	60
15	30/07/2019	Manager of IWAY Board	55
16	20/08/2019	Secretary of the Continuous Improvement Committee	82
17	12/09/2019	Manager of Supply Department	42
18	12/09/2019	Production Manager of Factory C	50
19	12/09/2019	Manager of Electromechanical Department of Factory A	30
20	27/09/2019	Deputy Director of N&TCo	30
21	09/10/2019	Staff of Quality Control Department	32